

What is claimed:

1. A method for obtaining diagnostic information relating to a patient having an implanted transducer, comprising:

vibrating an ossicular bone of the patient using an input provided to the ossicular bone over a biological conduction path, wherein the biological conduction path consists of biological components of the patient;

sensing in the implanted transducer an initial movement of the ossicular bone caused by the input provided over the biological conduction path;

obtaining an electrical signal output from the implanted transducer generated in response to sensing, in the implanted transducer, the initial movement of the ossicular bone; and,

utilizing the electrical signal output to determine the diagnostic information relating to the patient.

2. A method as recited in Claim 1, wherein the vibrating and sensing steps comprise:

vibrating the ossicular bone during a first time interval and sensing the initial movement during a second time interval, wherein the first and second time interval at least partially overlap.

3. A method as recited in Claim 1, wherein the vibrating and sensing steps comprise:

vibrating the ossicular bone and sensing the initial movement substantially simultaneously.

4. A method as recited in Claim 1, wherein the utilizing step comprises:

utilizing the electrical signal output to determine fitting parameter diagnostic information relating to at least one fitting parameter for the implanted transducer.

5. A method as recited in Claim 4, wherein the at least one fitting parameter includes an interface between the implanted transducer and the ossicular bone and the utilizing step comprises:

assessing the interface between the ossicular bone and the implanted
5 transducer.

6. A method as recited in Claim 5, wherein the assessing step comprises:
determining if the implanted transducer is underloaded relative to the ossicular
bone.

10 7. A method as recited in Claim 5, wherein the assessing step comprises:
determining if the implanted transducer is overloaded relative to the ossicular
bone.

15 8. A method as recited in Claim 5, wherein the assessing step comprises:
determining if a desired interface exists between the implanted transducer and
the ossicular bone.

20 9. A method as recited in Claim 5, further comprising:
repositioning the transducer relative to the ossicular bone in response to the
assessing step.

25 10. A method as recited in Claim 1, wherein the utilizing step comprises:
utilizing the electrical signal output to determine implanted transducer diagnostic
information relating to the implanted transducer.

30 11. A method as recited in Claim 10, wherein the implanted transducer
diagnostic information includes at least one operating parameter of the implanted
transducer.

12. A method as recited in Claim 11, wherein the at least one operating parameter includes a transducer performance parameter.

13. A method as recited in Claim 1, wherein the utilizing step comprises:
5 utilizing the electrical signal output to determine auditory system diagnostic information relating to the patient's auditory system.

14. A method as recited in Claim 13, wherein the auditory system diagnostic information includes a mobility of the patient's ossicular chain.

10 15. A method as recited in Claim 14, the method comprising:
using the mobility of the patient's ossicular chain to diagnose pathologies of the middle ear.

15 16. A method as recited in Claim 15, wherein the pathologies are selected from the group of pathologies comprising:
bony growths, arthritic conditions, and otitis media.

17. A method as recited in Claim 1, wherein the vibrating step includes:
introducing an acoustic signal into an ear canal of the patient.

20 18. A method as recited in Claim 1, wherein the vibrating step comprises:
vibrating at least a portion of a skull of the patient.

19. A method as recited in Claim 1, wherein the vibrating step comprises:
mechanically stimulating the tympanic membrane of the patient.

25 20. A method as recited in Claim 1, wherein the electrical signal output is generated in response to movement of an actuator of the implanted transducer by the ossicular bone.

21. A method as recited in Claim 20, wherein the sensing step comprises:
transducing the movement of the actuator into the electrical signal output.

22. A method as recited in Claim 1, wherein the utilizing step comprises:
comparing the electrical signal output with a predetermined electrical signal
5 output to generate the diagnostic information.

23. A method as recited in Claim 1, wherein the utilizing step comprises:
comparing the electrical signal output with a predetermined range of electrical
signal outputs to generate the diagnostic information.

10 24. A method as recited in Claim 1, wherein the utilizing step comprises:
calculating a ratio between the input and the electrical signal output; and
comparing the ratio to a predetermined ratio to generate the diagnostic
information.

15 25. A method as recited in Claim 1, wherein the utilizing step comprises:
obtaining at least one signal value from the electrical signal output; and
comparing the at least one signal value with a corresponding predetermined
value to obtain comparison data, wherein the comparison data is indicative of the
20 diagnostic information.

26 A method as recited in Claim 25, wherein the at least one value
corresponds with a magnitude component of the electrical signal output.

27. A method as recited in Claim 26, wherein the input comprises at least one
component of a predetermined frequency, and wherein the magnitude component of the
25 electrical signal output is obtained in corresponding relation to the predetermined
frequency of the input component.

28 A method as recited in Claim 25, wherein the at least one value
corresponds with a flow component of the electrical signal output.

29. A method as recited in Claim 1, further comprising:

repeating the vibrating, sensing, obtaining, and utilizing steps in connection with each of a plurality of patient assessments conducted as spaced timed intervals to obtain a corresponding plurality of comparison data; and

5 utilizing the plurality of comparison data to generate the diagnostic information as a function of time.